

CODE	COURSE TITLE
18MSUA202	STATISTICS FOR MATHEMATICS – II

Category	CIA	ESE	L	T	P	Credit
ALLIED	25	75	98	7	-	5

Preamble

To learn the theory of estimation and testing of statistical hypothesis

Prerequisite

- Must have the basic knowledge about the characteristics of statistical measures

Course Outcomes

On the successful completion of the course, students will be able to

CO Number	CO Statement	Knowledge Level
CO1.	learn the theory of estimation	K1
CO2.	acquire knowledge about confidence intervals	K2
CO3.	formulate the statistical hypothesis	K3
CO4.	enhance the statistical knowledge by applying the techniques learned in testing of statistical hypothesis	K2
CO5.	analyze and draw inferences based on the results of the testing of hypothesis	K4

Mapping with Programme Outcomes

COs	PO1	PO2	PO3	PO4	PO5
CO1.	M	S	M	S	M
CO2.	M	S	M	S	M
CO3.	S	S	S	S	S
CO4.	M	S	M	S	S
CO5.	S	S	M	S	S

S- Strong; M-Medium; L-Low

Syllabus

UNIT I

(21 hrs.)

Point Estimation : Maximum likelihood estimation – A simple regression problem – Sufficient Statistics – *Descriptive Statistics*

UNIT II

(21 hrs.)

Interval Estimation : Confidence Intervals for Means – Confidence Intervals for the Difference of Two Means – *Confidence Intervals of Proportions*– Sample Size.

UNIT III

(21 hrs.)

Test of Statistical Hypothesis : Tests About One Mean – Tests of the Equality of Two Means – *Tests About Proportions* – Power of a Statistical Test – Best Critical Regions.

UNIT IV

(21 hrs.)

Some more Parametric Tests : Chi-Square Goodness of Fit – Contingency Tables – Tests Concerning Regression – *Correlation*.

UNIT V

(21 hrs.)

Analysis of Variance : One – Factor Analysis of Variance – Two Way Analysis of Variance.

- *Italics* denotes self-study topics

Text Book

Sl.No.	Author Name	Title of the Book	Publisher	Year and Edition
1.	Robert V. Hogg, Elliot A. Tanis, Dale L. Zimmerman	Probability and Statistical Inference	Pearson Education Inc.	2015, 9 th Edition.

Reference Books

Sl.No.	Author Name	Title of the Book	Publisher	Year and Edition
1.	Presanna Sahoo	Probability and Mathematical Statistics	University of Louisville, USA	2013
2.	Barbara Illowsky, Susan Dean	Introductory Statistics	Rice University, Texas	2014 , Last Edition
3.	Robert V. Hogg, Joseph W. McKean, Allen T. Crag	Introduction to Mathematical Statistics	Pearson	2018, 8 th Edition.

4.	S.C. Gupta and V.K. Kapoor	Fundamentals of Mathematical Statistics	Sultan Chand & Sons	2014
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Pedagogy

- Lecture, PPT, Seminar, Subject viva, Videos

TEXT BOOK:

Unit	Chapter	Sections	Page No
I	6	6.1, 6.4, 6.5, 6.7	256-266
II	7	7.1 to 7.4	301-315,324-331
III	8	8.1 to 8.3, 8.5, 8.6	355-371, 392-406
IV	9	9.1, 9.2, 9.6	415-435, 462-467
V	9	9.3 to 9.4	435-455

- Question paper setters are asked to confine to the above **text book only**.